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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,487

04/12/2004

Peter Oosterhoff

P0011071.01

3020

27581 7590 09/30/2008  
MEDTRONIC, INC.  
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EXAMINER

HELLER, TAMMIE K

ART UNIT

PAPER NUMBER

3766

MAIL DATE

DELIVERY MODE

09/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/822,487	<b>Applicant(s)</b> OOSTERHOFF ET AL.	
	<b>Examiner</b> TAMMIE HELLER	<b>Art Unit</b> 3766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 33-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 29, 2008 has been entered. By this amendment, claims 33, 35, 36, 41, and 51 are amended, claim 32 is cancelled, claim 60 is added, and claims 33-60 are now pending in the application.

### ***Response to Arguments***

2. In view of the amendments to the claims, the Examiner is withdrawing the rejection against the claims under 102(e) as being anticipated by Park which was made in the previous Office Action.

3. Applicant's arguments filed July 29, 2008 regarding the rejection of the claims as being anticipated by Van Dam have been fully considered but they are not persuasive. The Applicant argues that Van Dam fails to address detecting an intrinsic signal component within a signal resulting from a delivered pacing pulse. As discussed in the Final Office Action of April 29, 2008, Van Dam discloses at Figure 6 determining if a ventricular event is a sensed event or a paced event. In response to determining that the Vevent is in response to a pacing pulse, the method of Van Dam proceeds to block 215 where intrinsic ventricular activity is detected and further to block 210 where the

spacing interval is extended based on the detection of intrinsic ventricular activity (see Figures 6 and 8 and col. 3, ln. 58-60).

4. Based on the Applicant's arguments it is believed that the Applicant intends to differentiate an "autonomous intrinsic signal component" from the intrinsic signal components disclosed by Van Dam. However, it is not clear from the Applicant's arguments or from the specification what this differentiation may be. Page 19, paragraph 64, line 1-2 of the presently-filed specification teaches that "detecting of intrinsic ventricular activity suggests that the ventricle of the heart is trying to contract autonomously." This section is the only place in the originally-filed specification that mentions autonomous signal activity and based on this description, it appears that an autonomous signal component is essentially the same as an intrinsic signal component. The Applicant is invited to point to where in the specification autonomous and intrinsic activity are differentiated.

#### ***Claim Objections***

5. Claims 36-39, 45-48, and 55-58 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The amendments to claims 41 and 51 and addition of claim 60 simply incorporates the subject matter contained in dependent claims 45-48, 55-58, and 36-39, respectively.

#### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 33-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The term "deviates enough" in claims 41, 51, and 60 is a relative term which renders the claim indefinite. The term "deviates enough" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what would be a sufficient deviation for the pacing pulse from the morphological characteristic of the past ventricular signal to satisfy the claim limitations.

9. The phrase "from both autonomous intrinsic ventricular activity" in line 19 of claim 41 is indefinite because only autonomous intrinsic ventricular activity is referenced and the term "both" refers to two entities.

10. The phrase "from both autonomous intrinsic ventricular activity" in line 22 of claim 51 is indefinite because only autonomous intrinsic ventricular activity is referenced and the term "both" refers to two entities.

11. The phrase "from both autonomous intrinsic ventricular activity" in line 19 of claim 60 is indefinite because only autonomous intrinsic ventricular activity is referenced and the term "both" refers to two entities.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 33, 35-42, 44-52, and 54-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Dam. Regarding claims 36-39, 41, 44-48, 51, 55-58, and 60, Van Dam discloses ventricular pacing electrodes 28 and 29 at the distal end of ventricular pacing lead 18 which are capable of delivering a pacing pulse to a ventricle of the heart (see col. 4, ln. 19-21), detects intrinsic ventricular activity (see col. 11, ln. 21-22 and col. 3, ln. 58-60), and extends a pacing interval between pacing pulses based on the detection of intrinsic ventricular activity (see col. 1, ln. 7-11). Attention is directed to Figure 6 where at decision block 200 it is determined whether an intrinsic Vevent occurred or a paced Vevent. When it is determined that a paced Vevent occurred, the flow progresses to block 215 where intrinsic ventricular activity is detected and further to block 210 where the pacing interval is extended based on the detection of intrinsic ventricular activity (see Figures 6 and 8 and col. 3, ln. 58-60). Furthermore, Van Dam discloses that in order to detect intrinsic ventricular activity within the heart, a past ventricular signal is compared with the current ventricular signal (see col. 1, ln. 56-59), that a past ventricular signal may be a most recent ventricular signal resulting from a

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most recent pacing pulse (see col. 11, ln. 37-41), and comparing at least one morphological characteristic of a past ventricular signal to the same morphological characteristic of the current ventricular signal (see col. 3, ln. 9-11). Finally, the Examiner takes the position that it is inherent that the device of Van Dam utilizes a past ventricular signal where the heart is fully captured by the past pacing pulse. It is necessary for a pacing pulse to fully capture the heart in order to evoke a cardiac response that generates the QT interval of Van Dam.

14. Regarding claims 33, 42, 52, it is inherent that when the device of Van Dam extends the pacing interval between pacing pulses, thus increasing the amount of time between pulses, the detection of intrinsic ventricular activity is aided. If there is a longer period of time during which there is no pacing pulse, the possibility of detecting intrinsic ventricular activity is enhanced.

15. Regarding claims 35 and 54, it is inherent that the subsequently delivered pacing pulse of Van Dam may be delivered to a ventricle of the heart after the delivered pacing pulse (see col. 4, ln. 19-21).

16. Regarding claims 40, 49, and 59, Van Dam discloses that a morphological characteristic that may be used is a T-wave amplitude or T wave slope (see col. 3, ln. 9-11).

17. Regarding claim 50, Van Dam discloses memory 59 which may be used to store the past ventricular signal (see Figure 5).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

18. Claims 33-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Bradley (U.S. 2003/0050671). Regarding claims 36-39, 41, 45-48, 51, 55-58, and 60, Bradley discloses a method and apparatus for capture tracking that includes at least one electrode 26, 32, 34, 36 to deliver a ventricular pacing pulse and sense a ventricular signal response and a processor 60 (see Figures 1 and 2). Further, Bradley discloses that the processor detects whether an autonomous intrinsic signal component is present within the sensed ventricular response by comparing a morphological characteristic of a past signal response to the same morphological characteristic of the sensed response (see Abstract) and extends a pacing interval in response to the detecting of an autonomous intrinsic signal component (see Figures 5 and 6).

19. Regarding claims 33, 34, 42, 43, 52, and 53, Bradley discloses modulating an atrial to ventricular pacing delay to aid in the detection of the autonomous intrinsic signal component (see paragraph 64).

20. Regarding claims 35, 44, and 54, Bradley discloses that the subsequently delivered pacing pulse may be delivered to a ventricle (see Figures 5 and 6 and paragraph 40).

21. Regarding claims 40, 49, and 59, Bradley discloses that the morphological characteristic may be amplitude (see paragraph 100) or slope (see paragraph 72).



22. Regarding claim 50, Bradley discloses a memory 94 (see Figure 2).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAMMIE HELLER whose telephone number is (571)272-1986. The examiner can normally be reached on Monday through Friday from 7am until 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl H. Layno can be reached on 571-272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Carl H. Layno/  
Supervisory Patent Examiner, Art Unit 3766

/Tammie Heller/  
Examiner, Art Unit 3766